WHAT IS CLAIMED IS:

1. A sample-and-hold amplifier circuit, comprising:

a sampling circuit that carries out a sampling of an input signal; and

an operational amplifier that carries out an operational amplification of the input signal that has been subjected to the sampling by the sampling circuit,

wherein the operational amplifier includes:

first and second operational amplifier stages that are connected in this order in a series manner;

a switch, provided between an output terminal of the first operational amplifier stage and an input terminal of the second operational amplifier stage, that connects or cuts off connection of a connection of the first and second operational amplifier stages so as to be nonconductive in a first operation phase during which the sampling is carried out and so as to be conductive in a second operation phase during which the operational amplifier, as a whole, carries out the operational amplification; and

a phase compensation capacitor provided between an output terminal and the input terminal of the second operational amplifier stage.

2. The sample-and-hold amplifier circuit as set forth in claim 1,

wherein the operational amplifier includes:

a phase compensation resistor provided between the input and output terminals of the second operational amplifier stage so as to be connected with the phase compensation capacitor in a series manner;

a switch for short-circuiting the phase compensation resistor, connected with the phase compensation resistor in a parallel manner, that is conductive during the first operation phase and is nonconductive during the second operation phase.

3. A sample-and-hold amplifier circuit, comprising:

a sampling circuit that carries out a sampling of an input signal; and

an operational amplifier that carries out an operational amplification of the input signal that has been subjected to the sampling by the sampling circuit,

wherein the operational amplifier includes:

multiple operational amplifier stages that are connected with each other in a series manner;

a switch, that (a) connects or cuts off a connection of the operational amplifier stages, (b) is

nonconductive during a first operation phase during which the sampling is carried out, and (c) is conductive in a second operation phase during which the operational amplification is carried out by the operational amplifier as a whole, said switch being provided between either one pair of neighboring first and second operational amplifier stages so as to be provided between an output terminal of the first operational amplifier stage and an input terminal of the second operational amplifier stage; and

phase compensation capacitors provided between an output terminal of a final operational amplifier stage and at least the input terminal of the second operational amplifier stage.

4. The sample-and-hold amplifier circuit as set forth in claim 3,

wherein the operational amplifier includes:

phase compensation resistors provided between the output terminal of the final operational amplifier stage and the input terminals of the operational amplifier stages following the switch so as to be respectively connected with the phase compensation capacitors in a series manner; and

a switch for short-circuiting the phase

compensation resistor, connected in a parallel manner with the phase compensation resistor that is provided between the output terminal of the final operational amplifier stage and the input terminals of an operational amplifier stage following the switch so as to be connected with the phase compensation resistor, which is connected to the phase compensation capacitor in a series manner, the switch being conductive during the first operation phase and being nonconductive during the second operation phase.

5. The sample-and-hold amplifier circuit as set forth in claim 1,

wherein the operational amplifier further includes a phase compensation resistor provided between the input and output terminals of the second operational amplifier stage so as to be connected with the phase compensation capacitor in a series manner.

6. A pipelined A/D converter, comprising:

at least one first sub-A/D converter blocks, connected with each other in a series manner, that include (a) a sub-A/D converter that converts an input signal into a predetermined-numbered bit information and (b) a sub-operatinal-circuit which converts the bit

information into an analog value, carries out an operational amplification with respect to a difference between the analog value and the input signal so as to output the difference that has been subjected to the operational amplification, and

a second sub-A/D converter block that includes a sub-A/D converter which converts an output signal of the first sub-A/D converter block of a final stage into the remainder of the bit information,

said sub-operatinal-circuit being a sample-and-hold amplifier circuit that includes:

a sampling circuit that carries out a sampling of the input signal; and

an operational amplifier that carries out an operational amplification of the input signal that has been subjected to the sampling by the sampling circuit,

said operational amplifier including:

first and second operational amplifier stages that are connected in this order in a series manner;

a switch, provided between an output terminal of the first operational amplifier stage and an input terminal of the second operational amplifier stage, that connects or cuts off connection of a connection of the first and second operational amplifier stages so as to be nonconductive in a first operation phase during

which the sampling is carried out and so as to be conductive in a second operation phase during which the operational amplifier, as a whole, carries out the operational amplification; and

a phase compensation capacitor provided between an output terminal and the input terminal of the second operational amplifier stage.

7. The pipelined A/D converter as set forth in claim 6,

wherein the operational amplifier includes:

a phase compensation resistor provided between the input and output terminals of the second operational amplifier stage so as to be connected with the phase compensation capacitor in a series manner;

a switch for short-circuiting the phase compensation resistor, connected with the phase compensation resistor in a parallel manner, that is conductive during the first operation phase and is nonconductive during the second operation phase.

8. A pipelined A/D converter, comprising:

at least one first sub-A/D converter blocks, connected with each other in a series manner, that include (a) a sub-A/D converter that converts an input

signal into a predetermined-numbered bit information and (b) a sub-operatinal-circuit which converts the bit information into an analog value, carries out an operational amplification with respect to a difference between the analog value and the input signal so as to output the difference that has been subjected to the operational amplification, and

a second sub-A/D converter block that includes a sub-A/D converter which converts an output signal of the first sub-A/D converter block of the final stage into the remainder of the bit information,

said sub-operatinal-circuit being a sample-and-hold amplifier circuit that includes:

a sampling circuit that carries out a sampling of the input signal; and

an operational amplifier that carries out an operational amplification of the input signal that has been subjected to the sampling by the sampling circuit,

said operational amplifier including:

multiple operational amplifier stages that are connected with each other in a series manner;

a switch, that (a) connects or cuts off a connection of the operational amplifier stages, (b) is nonconductive during the first operation phase during which the sampling is carried out, and (c) is conductive

in the second operation phase during which the operational amplification is carried out by the operational amplifier as a whole, said switch being provided between either one pair of neighboring first and second operational amplifier stages so as to be provided between an output terminal of the first operational amplifier stage and an input terminal of the second operational amplifier stage; and

phase compensation capacitors provided between an output terminal of a final operational amplifier stage and at least the input terminal of the second operational amplifier stage.

9. The pipelined A/D converter as set forth in claim 8,

wherein the operational amplifier includes:

phase compensation resistors provided between the output terminal of the final operational amplifier stage and the input terminals of the operational amplifier stages following the switch so as to be respectively connected with the phase compensation capacitors in a series manner; and

a switch for short-circuiting the phase compensation resistor, connected in a parallel manner with the phase compensation resistor that is provided

between the output terminal of the final operational amplifier stage and the input terminals of an operational amplifier stage following the switch so as to be connected with the phase compensation resistor, which is connected to the phase compensation capacitor, in a series manner, the switch being conductive during the first operation phase and being nonconductive during the second operation phase.

10. The pipelined A/D converter as set forth in claim 6,

wherein the operational amplifier further includes a phase compensation resistor provided between the input and output terminals of the second operational amplifier stage so as to be connected with the phase compensation capacitor in a series manner.

11. A pipelined D/A converter, comprising:

a plurality of sample-and-hold circuits that are connected with each other in a series manner and are used as a sub-D/A converter that converts a predetermined-numbered bit information of a digital signal into an analog value,

the sub-D/A converter carrying out an operational amplification with respect to an analog input signal

and an analog signal that corresponds to the predetermined-numbered bit information and send it to a sub-D/A converter of the next stage so that the sub-D/A converter of the final stage outputs an analog signal corresponding to the digital signal,

the sample-and-hold amplifier circuit, including:

a sampling circuit that carries out a sampling of an input signal; and

an operational amplifier that carries out an operational amplification of the input signal that has been subjected to the sampling by the sampling circuit,

the operational amplifier including:

first and second operational amplifier stages that are connected in this order in a series manner;

a switch, provided between an output terminal of the first operational amplifier stage and an input terminal of the second operational amplifier stage, that connects or cuts off connection of a connection of the first and second operational amplifier stages so as to be nonconductive in a first operation phase during which the sampling is carried out and so as to be conductive in a second operation phase during which the operational amplifier, as a whole, carries out the operational amplification; and

a phase compensation capacitor provided between an output terminal and the input terminal of the second operational amplifier stage.

12. The pipelined D/A converter as set forth in claim 11,

wherein the operational amplifier includes:

a phase compensation resistor provided between the input and output terminals of the second operational amplifier stage so as to be connected with the phase compensation capacitor in a series manner;

a switch for short-circuiting the phase compensation resistor, connected with the phase compensation resistor in a parallel manner, that is conductive during the first operation phase and is nonconductive during the second operation phase.

13. A pipelined D/A converter, comprising:

a plurality of sample-and-hold circuits that are connected with each other in a series manner and are used as a sub-D/A converter that converts a predetermined-numbered bit information of a digital signal into an analog value,

the sub-D/A converter carrying out an operational amplification with respect to an analog input signal

and an analog signal that corresponds to the predetermined-numbered bit information and send it to a sub-D/A converter of the next stage so that the sub-D/A converter of the final stage outputs an analog signal corresponding to the digital signal,

the sample-and-hold amplifier circuit, including:

a sampling circuit that carries out a sampling of an input signal; and

an operational amplifier that carries out an operational amplification of the input signal that has been subjected to the sampling by the sampling circuit,

said operational amplifier including:

multiple operational amplifier stages that are connected with each other in a series manner;

a switch, that (a) connects or cuts off a connection of the operational amplifier stages, (b) is conductive during the first operation phase during which the sampling is carried out, and (c) is nonconductive in the second operation phase during which the operational amplification is carried out by the operational amplifier as a whole, said switch being provided between either one pair of neighboring first and second operational amplifier stages so as to be provided between an output terminal of the first

operational amplifier stage and an input terminal of the second operational amplifier stage; and

phase compensation capacitors provided between an output terminal of a final operational amplifier stage and at least the input terminal of the second operational amplifier stage.

14. The pipelined D/A converter as set forth in claim 13,

wherein the operational amplifier includes:

phase compensation resistors provided between the output terminal of the final operational amplifier stage and the input terminals of the operational amplifier stages following the switch so as to be respectively connected with the phase compensation capacitors in a series manner; and

a switch for short-circuiting the phase compensation resistor, connected in a parallel manner with the phase compensation resistor that is provided between the output terminal of the final operational amplifier stage and the input terminals of an operational amplifier stage following the switch so as to be connected with the phase compensation resistor, which is connected to the phase compensation capacitor, in a series manner, the switch being conductive during

the first operation phase and being nonconductive during the second operation phase.

15. The pipelined D/A converter as set forth in claim 11,

wherein the operational amplifier further includes a phase compensation resistor provided between the input and output terminals of the second operational amplifier stage so as to be connected with the phase compensation capacitor in a series manner.